Entrepreneurship and the theory of the firm

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Abstract

Entrepreneurship is a missing component of several leading theories of the firm. Entrepreneurship is key to the growth and survival of firms in a volatile environment, because entrepreneurial judgement is necessary to success in making complex decisions under uncertainty. The addition of entrepreneurship is not a minor refinement of the theory of the firm, but represents a radical change. The paper summarises the principle changes. It suggests that the introduction of entrepreneurship can facilitate the development of an integrated synthetic theory of the firm.

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Entrepreneurship and the Theory of the Firm

1. Introduction and plan of paper

This paper argues that the theory of entrepreneurship is a necessary element in any comprehensive synthesis of theories of the firm. The theory of entrepreneurship is naturally equipped to act as an integrating framework with which a synthesis of other theories can take place.

Section 2 explains why a synthetic theory of the firm is required. Sections 3 and 4 summarise a theory of entrepreneurship, building on a previous survey of the fundamental concepts [Casson (2000)]. This discussion highlights the importance to the theory of the concepts of volatility and information cost. Entrepreneurship is a process which is central to the market economy, and can be analysed by extending orthodox modelling techniques. The key is to generalise the standard rational action model of neoclassical economics to an uncertain world in which differential access to information generates radical differences in the perception of the business environment between different groups of people. Entrepreneurs attempt to exploit these differences of perception to their own advantage.

Sections 5 and 6 examine the links between the entrepreneur as an individual and the firm as an organisation which he controls. It focuses on a particular type of organisation: the market-making firm. The market-making firm is called into existence when the entrepreneur identifies an unsatisfied demand for a new product or service.

Section 7 argues that many of the strategic issues encountered by the entrepreneur stem from the fact that he is more optimistic about the prospects of the firm than are the other parties - shareholders, employees and suppliers - with whom he deals. Before the firm is set up the entrepreneur can profit from the fact that his perception is different from that of other people, but once it is set up there are advantages in aligning other people's perceptions with his own. This is achieved by sharing information. Successful entrepreneurship calls for sophisticated information management. The entrepreneur needs to know when, and with whom, to share information, and when to keep it secret instead.

Section 8 applies the theory to a range of topics within the theory of the firm. Section 9 discusses the relationship between the theory of entrepreneurship and the resource-based theory of the firm. Section 10 summarises the arguments and considers the implications for future research.

2. Scope for synthesis in the theory of the firm

In the 1970s the theory of the firm was relatively straightforward. It was based on a critique of neoclassical theory. The objective was to 'open up' the black box of the neoclassical production function in order to explain technological change and the scope of the firm [Coase (1937); Loasby, (1976)]. The firm was regarded as a planning mechanism which superseded prices within its boundaries.

Today the theory of the firm has become a multi-disciplinary subject [Foss (1997)]. It seeks to explain many different aspects of firm behaviour. There is more emphasis on analysing the success and failure of individual firms. The widespread use of strategic management terminology reflects the increasing use of the theory of the firm in management education and consultancy.

One reason for this change is the growing demand for a comprehensive theory of the firm. Academic researchers - especially PhD candidates - need a framework within which to assimilate and structure an increasingly vast literature, whilst students - especially MBA students – prefer a single received theory – or dogma – to a confusing array of alternatives which are endlessly debated. Management consultants require an intellectual product that can be standardised and explained in simple terms to clients, while business advisers supporting SMEs need a 'grounded' theory of the firm which leads to practical advice.

There are many partial theories of the firm, explaining different aspects of firm behaviour, but these partial theories have proved difficult to synthesise into a comprehensive theory. One reason for this difficulty may be that until recently little attempt was made to integrate entrepreneurship into the theory of the firm. This neglect may be due to the fact that much of the traditional literature on entrepreneurship [e.g. Cantillon (1755); Knight (1921)] is economic, and has little to say about the management of firms. Another factor is that some of the economic literature on entrepreneurship is characterised by distinctive psychological assumptions which, although very insightful, do not fit well with mainstream theory. Schumpeter (1934, 1939), for example, adopts a social and cultural approach to entrepreneurial motivation, highlighting the 'will' to succeed, the urge to prove oneself superior to others, and the desire to establish a dynasty. More recently, Kirzner (1973, 1997) has claimed that a special psychology of alertness to opportunity is a feature of the successful entrepreneur.

The primary objective of this paper is to argue that managerial perspectives on the firm can be usefully combined with economic insights into entrepreneurship to move closer towards the goal of a synthetic theory of the firm. A number of important contributions of this type have recently appeared – notably Foss and Klein (2002), Sautet (2000) and Witt (1998a,b). While these writers draw heavily on Austrian and evolutionary theory, however, the present paper approaches the issue from a more institutional approach to entrepreneurship, based on information costs.

3. Defining the entrepreneur: judgement and the subjective perception of risk

The theoretical literature on entrepreneurship had grown dramatically over the last ten years, and there is too much to survey adequately in this paper; see Shane (2000), Westhead and Wright (2000) and Acs and Audretsch (2003) for recent summaries. This paper therefore focuses on a single theoretical tradition, rooted in the classic economic writings on the subject noted above; for a review of this tradition, see the introduction to Casson (1990).

A critical review of these writings points to *judgemental decision-making* as a common feature of their accounts of the entrepreneur. Judgemental decision-making involves an element of improvisation, rather than exclusive reliance on routines. It makes use not only of publicly available information but also private information available only to a few. The exercise of judgment involves a synthesis of all this information, for it is rarely the case that a single item of information is sufficient for taking an important business decision. Although everyone makes judgemental decisions from time to time, only the entrepreneur specialises in this activity (Casson, 1982). For the purposes of this paper, therefore, specialisation in judgemental decision-making is taken as the defining characteristic of the entrepreneur. All the other characteristics imputed to the entrepreneur are deduced from this by introducing specific assumptions about the environment in which the entrepreneur operates.

The decisions to which judgment is applied concern investments in projects of various kinds. Cantillon (1755) emphasises investment in hiring labour and materials to produce consumer goods in anticipation of future sales. Knight (1921) is more concerned with the large-scale fixed investments characteristic of early 20th century big business. Schumpeter's conception of investment is even more heroic than Knight’s, involving the creation of new industries, sometimes triggering the next ‘long wave’ of capitalist economic development. Austrian writers, by contrast, emphasise the kind of speculation and arbitrage which is characteristic of SMEs in the wholesale trades. Harper (1996) has argued that the judgements made by entrepreneurs resemble the judgements made by scientists in deciding which experiments to carry out: the entrepreneur’s ‘business model’ corresponds to the hypothesis, whilst the profitability of the project corresponds to the result of the experiment. The more recent work of Baumol (2002) focuses on the incentives under which judgemental decision-making takes place, with special reference to the issue of how far ‘rent-seeking’ dominates entrepreneurial motivation under perverse incentive systems.

Judgemental decision making is closely allied to risk and uncertainty. When an entrepreneur takes a decision based on information that is not available to other people, the other people may perceive the decision to be a risky one. The entrepreneur perceives the risk as much lower, however, because of the information in his possession.

While the entrepreneur may feel confident about the accuracy of his information, he cannot in fact be certain that it is correct. No item of information comes accompanied by a cast-iron endorsement of its truth: observations on primary sources of information are subject to error, and second-hand accounts are liable to distortion or misrepresentation. An entrepreneur who perceives a lower level of risk than other people may well be right: if so, his investment is likely to be profitable because other people's perceptions will discourage them from competing against him. But if his perception is wrong then his investment will prove unprofitable: the successful decisions will be those made by potential competitors who decided to stay out of the activity. The theory of entrepreneurship therefore highlights the subjectivity of risk perceptions [Shackle (1979)].

Standard neoclassical economic models imply that risk is allocated on a simple insurance principle: overall risk is reduced by pooling, and the remaining (‘systematic’) risks are then allocated to the least risk-averse individuals. In effect, the least risk-averse insure the most risk-averse. From this perspective, entrepreneurs are simply people with low risk aversion [Milgrom and Roberts (1992)]. The theory of entrepreneurship attempts to extend this view by allowing for individuals to differ, not only in risk-aversion, but also in their access to information, and hence in the subjective probabilities that enter into their assessments of risk.

When people differ in their degree of optimism, as reflected in subjective probabilities, but have similar degrees of risk aversion, the optimistic will invest and the pessimistic will not. Entrepreneurs who invest in projects will thus tend to be more optimistic than people who do not invest. Potential investors in a project may be ranked according to the subjective probability that they associate with a ‘good’ rather than a ‘bad’ outcome to a project. The higher the probability that a person associates with a good outcome, the more optimistic they are said to be. This optimism reflects the entrepreneurs’ interpretation of the privileged information at their disposal (for a formal model constructed on these lines see Casson (1995)).

If these optimistic entrepreneurs are aware that other people are more pessimistic than themselves then they will naturally ask why this is so. Their answer must be that they are confident that the additional information which they are using is correct. An individual is said to be self-confident when, although they are aware that other people’s subjective probabilities are different to their own, they remain convinced that their own subjective probability assessment is correct. By contrast, a person lacking in self-confidence will adjust their own subjective probabilities to align them with the subjective probabilities expressed by other people whom they respect. Thus a person lacking self-confidence would go ahead with a project on the basis of an optimistic evaluation only if they were unaware of other people’s views. A combination of optimism and self-confidence is therefore characteristic of the entrepreneur who proceeds with a project which he knows that others consider to be excessively risky.

It could be objected that this emphasis on optimism and self-confidence in the theory of entrepreneurship is of no significance because it does not imply any difference in behaviour compared to the risk aversion view. This is incorrect, however. Optimism and self-confidence reflect different aspects of personality to risk aversion. More importantly, optimism and self-confidence can be influenced in a way which risk aversion cannot. It is argued below that successful entrepreneurs can influence their customers, employees, suppliers, and financial backers to be more optimistic, and hence more entrepreneurial themselves. By influencing their environment in this way they can improve the performance of their enterprise and, under certain conditions, the performance of the economy too. Such influence would be impossible if an autonomous level of risk aversion was characteristic of every individual, as assumed in neoclassical theory.

To summarise:

1. Specialisation in judgemental decision-making is the defining characteristic of the entrepreneur, for the purposes of this analysis.
2. Superior judgment stems from privileged information (which is substantially correct).
3. Perceptions of risk are subjective. A confident entrepreneur may perceive no risk where others perceive considerable risk. An entrepreneur invests when

others do not when he is both optimistic and confident in his own judgement, relative to others.

4. The entrepreneur's perception may be right or wrong. If his optimism is warranted, his investment will be profitable, while if it is not, he will make a loss. In the long run an entrepreneur with good judgement will, on average, be successful while an entrepreneur with bad judgement is likely to be unsuccessful. Successful entrepreneurship is sustainable because it generates profits that can be used to finance subsequent investments, and build up reputation, whereas unsuccessful entrepreneurship is not sustainable because it eventually destroys reputation and uses up all available funds.

4. Developing a theory of entrepreneurship: volatility and information cost

Focusing on judgment indicates the fundamental reason why the theory of entrepreneurship has diverged from neoclassical orthodoxy. It is not primarily a question of psychologism, but rather a recognition of the crucial importance of volatility in the environment. Allied to this is a recognition of the costliness of maintaining up-to-date information about the environment [Richardson (1960)].

Volatility reflects the fact that the economic environment is continually subjected to shocks. Shocks are extremely varied: they include disruptions to raw-material supply caused by accidents, fads and fashions in consumer tastes, labour absenteeism, and technological progress generated by scientific experiment. Wars and natural disasters are extreme shocks: they are not *ad hoc* disruptions to an equilibrium state, as economic orthodoxy tends to suggests, but simply limiting cases of the kind of volatility that affects the economy all the time.

Volatility and information cost are, to some extent, two sides of the same coin. Volatility means that information about the state of the environment is constantly obsolescing, so that a continuous flow of new information is needed to keep the picture of the environment up-to-date. But collecting information is costly - in particular it is very time-consuming [Lippman and McCall (1979)]. To maintain up-to-date information at minimum cost it is appropriate to specialise the collection and processing of information. Specialisation can be based on

?? the separation of routine decisions from improvised decisions,
?? the allocation of different routine decisions to different organisations (or to different people within an organisation), and
?? the allocation of different improvised decisions to different entrepreneurs.

To understand in detail the link between the entrepreneur and his firm it is important to appreciate the different types of shock to which the entrepreneur must respond. Four main dimensions of volatility may be distinguished for this purpose (see Table 1).

Shocks may be either *general* or *specific*: general shocks affect an entire sector or even the macro-economy, whilst specific shocks affect a particular individual, firm or market. Information relating to general shocks is often supplied through independent intermediaries, such as the media. Information about specific shocks normally has to be gathered at first hand by people specialising in a particular field of activity. The privileged information exploited by an entrepreneur is normally of the specific variety. It is the ability to deal with shocks of a specific nature which is the hallmark of the successful entrepreneur.

Some shocks are *short-term*, such as those due to accident or illness, whereas others are *long-term*, such as those caused by technological progress or demographic change. Short-term shocks are typically of a limited range of types: they occur frequently, their individual impacts tend to be small, and their effects are transitory, and easily reversed. By contrast, long-term shocks are very diverse; any given type of shock occurs only occasionally, its impact tends to be large and its effects are persistent and even irreversible.

For decisions dealing with short-term volatility, which need to be taken on a regular basis, it is usually economic for the entrepreneur to devise routine procedures for collecting information, as well as algorithms for calculating the best decision on the basis of this information. Different individuals may specialise in different stages of the information processing, so that the routines are implemented by an organisation comprising a team of individuals. Although the organisation is routine in its operation, the design and establishment of the organisation, and its procedures, involves judgemental decisions at the outset by the entrepreneur.

Most key investment decisions are a response to long term volatility. Investment decisions are not sufficiently alike, and do not recur sufficiently often, to warrant the development of routine procedures. These decisions therefore need to be improvised. Since their information requirements are difficult to anticipate in advance, the appropriate strategy is to concentrate responsibility for the decision on a suitable individual, who has an unusually wide range of experience, and a network of personal contacts appropriate for bringing to bear all the information necessary to take the decision. This individual is a classic entrepreneur. He synthesises information from diverse sources in order to take an important and risky decision. He is responding to long-term volatility of a specific nature - volatility which corresponds to the bottom right-hand cell in Table 1. His investment, once established, will, however, be subject to short-term volatility, and so he will establish an organisation to monitor and adapt to this volatility. This organisation is the firm – it is the legal framework through which the entrepreneur controls his organisation (the classic work on the design of efficient organizations is Marschak and Radner (1972); a recent influential paper is Bolton and Dewatripont (1994)).

It is important not to exaggerate the opposition between the improvisation of the entrepreneur and the routine decision-making of the ordinary members of the organisation that he controls. Managerial and clerical employees who notice anomalies, such as deviations from trends, or variability outside of normal bounds, may report these anomalies to the entrepreneur. By focusing the entrepreneur's attention on the explanation of such anomalies, new investment opportunities may be identified. Even where small businesses are concerned, the entrepreneurs who found them may have developed their initial ideas from noticing anomalies of this type whilst employed by a larger firm. Thus routine and improvisation are not perfect substitutes - there are significant elements of complementarity too. The innovative entrepreneur and the routine-driven manager perform complementary roles within a typical firm.

While the two dimensions of volatility described in Table 1 are the most fundamental, other dimensions are relevant too. Some shocks are *demand-related*, and impact mainly on a firm's revenues, whilst others are *supply-related* and mainly affect a firm's costs. Most firms experience both types of shock on a regular basis. The relative importance of these shocks can significantly influence the organisational structure of the firm. When demand volatility is significantly greater than supply volatility then it will normally pay to invest most heavily in monitoring demand conditions, giving the marketing department high status, and a large budget, within the firm; conversely, when supply volatility is greatest, the production and purchasing departments are likely to be dominant instead (for further details see Casson (1999) and the references cited there).

Finally, some shocks are *tangible* - relating to physical stocks and flows of materials - whereas others are *intangible* - relating to beliefs and values, including technological beliefs and legal and institutional arrangements. Much economic analysis of entrepreneurship implicitly assumes that entrepreneurs monitor mainly tangible shocks, such as the effects of income, prices of inputs and competing products, and so on. Historical accounts of entrepreneurship, however, tend to emphasise the importance of monitoring intangible factors such as changing social attitudes. Changes in intangible factors often lead changes in tangible factors; for example, changes in beliefs about the role of women in society influence the supply of labour to various occupations, and also affect patterns of consumer demand.

As already noted, it is specific rather than general shocks that are most directly relevant to the entrepreneur. Table 2 classifies shocks of a specific and long-term nature according to these additional dimensions, whilst Table 3 does the same for specific shocks of a short-term nature.

Combining all these four dimensions together provides a reasonably comprehensive basis for analysing how different patterns of volatility lead to different manifestations of entrepreneurship, which lead in turn to firms of different sizes and structures. The implications of any given type of volatility can be inferred from its classification. For example, disruptions to raw-material supplies exemplify short-term tangible shocks which are supply-related and sector specific. Volatility of this type strengthens the need for specialised procurement managers in the firm. Conversely fads and fashions in consumer tastes exemplify intangible shocks which, though also short-term and specific, are intangible and demand-related. Volatility of this type requires the entrepreneur to invest in marketing, and to socialise with trend-setters, in order to anticipate the direction in which demand will change.

Competition is also a source of volatility. Rival firms do not always compete with constant intensity, but may initiate periodic drives to enter markets or increase their existing market shares. Entrepreneurs need to monitor the launch of their rivals' initiatives, so that they can neutralise their impacts quickly. Competition in the product market arising from the market-making initiatives of rival firms generates a succession of short-term, tangible, specific, demand-related shocks.

This view of the business system is radically different from the one that appears in most economics textbooks. The focus is no longer on flows of material products between production plants, and the balancing flow of money payments; instead, it focuses on the flow of information [Boisot (1995)]. At any given time the system as a whole, and the individual firm in particular, is subjected simultaneously to shocks of many different types. Entrepreneurs establish organisations which identify and then monitor key sources of volatility. They maintain social networks which channel selected information to key decision makers in these organisations. Entrepreneurial organisations are located at nodes on social information networks. Information from diverse sources converges on these nodes, and it is there, in the headquarters of entrepreneurial firms, that the information is synthesised prior to investment decisions being made. From this perspective, the ‘economic problem’ is one of devising an appropriate division of labour in the processing of information, and in investing in an infrastructure that will support it. This infrastructure includes both tangible elements such as lines of transport and communication, and intangible elements, such political structures and social networks [Eliasson, Folster, Lindberg, Pousette and Taymas (1990)].

5. The entrepreneur as market-maker: implications for the theory of the firm

An important difference between the theory of entrepreneurship and the neoclassical theory of the firm concerns the nature of the investments made by entrepreneurs. In neoclassical theory investment is typically associated with fixed investment, which is combined with labour in a manufacturing process which generates material output. One of the main outcomes of the entrepreneurial synthesis of information, however, is not the identification of a superior form of fixed capital, but rather the identification of a market-making opportunity - that is, an opportunity to bring together suppliers of inputs and consumers of outputs through the establishment of a new market [Casson, (1997)]. In some cases - such as product innovation - the market may not have existed before. In other cases, such as the development of new wholesale and retail outlets, an existing market is extended to new locations, so that new groups of customers can be served. Evidence from business histories suggests that one of the most important forms of entrepreneurial activity is to identify changes in patterns of demand and to create new markets to meet these demands. This is not the only form of entrepreneurial activity, by any means, but it is an important, and often neglected one.

Major market-making investments typically involve the design of a new product or the refinement of an existing product. The product may be promoted by a brand using an image built up through advertising. This is part of the influencing activity of the entrepreneur described in more detail below. To solicit orders and collect payment, retail outlets will be required, and these outlets will, in turn need to be served by wholesale facilities. Training schemes for staff may need to be provided too. All this activity will certainly require fixed investments, but they are more likely to be in the form of offices, shops and warehouses than factories.

The activities of the market-making entrepreneur may be regarded as a specific manifestation of the ‘market process’ as described by Austrian economists [Kirzner (1979)]. But the market-making entrepreneur is in some respects more subversive of neoclassical theory than the Austrian approach. The Austrian market process is usually construed, in neoclassical terms, as asserting that markets are always out of equilibrium, and that entrepreneurial interventions tend to move markets towards equilibrium, without them ever reaching that state. This interpretation presumes, however, that the markets already exist: this is reflected in the reference to entrepreneurial activity as speculation or arbitrage – both of these are activities which take place in established markets. Radical forms of market-making entrepreneurship, however, involve designing products or specifying services which did not previously exist, and for which there was therefore no market. In the absence of the entrepreneur, therefore, it is not the case that markets would be merely out of the equilibrium, as the Austrian view suggests, but that markets would not exist at all.

Focusing on the entrepreneur as a market-maker points to some other dramatic differences between the theory of entrepreneurship and the neoclassical approach. Neoclassical theory is strongly influenced by the concept of the Walrasian auctioneer who maintains an equilibrium in competitive markets. Even though the Walrasian model has been refined by theories of monopolistic competition and oligopoly, the basic idea that the market is somehow already there, and the entrepreneur is merely a producer who supplies it, continues to influence the neoclassical literature on industrial organisation. However, the presence of the Walrasian auctioneer, or a pre-existing market, is incompatible with the analytical thrust of the theory of the entrepreneur. In the absence of the entrepreneur there would be no markets at all.

From the entrepreneurial perspective it is very obvious why the Walrasian auctioneer is a pure fiction. The Walrasian auctioneer can be considered as an unusual kind of market-making entrepreneur. He is unusual in three senses. First, he incurs no costs, because the information he requires is available free. Thus Walrasian theory implicitly sets information cost to zero so far as market-making is concerned.

Secondly, the Walrasian auctioneer is an absolute monopolist. Unlike ordinary entrepreneurs, he faces no competition from rivals. One reason why rivals do not enter is that the auctioneer is completely altruistic. Despite his unprecedented monopoly power, he extracts no profit, because he sets no margin between buying price and selling price. There are therefore no profits for which others can compete.

His altruism is the third unusual characteristic of the auctioneer. The model of the auctioneer would provide a sound basis for analysing markets only if, among a population of potential entrepreneurs, there was a single God-like figure, who was all powerful and totally altruistic. The only way to model markets rigorously is to consider fully all the implications of abandoning this Utopian view, and that is, in effect, what the modern theory of entrepreneurship has done.

The fact that market-making is such an important activity also sheds light on the debate in the theory of the firm over vertical integration. Most analysis of vertical integration has focused on the coordination of adjacent facilities within a multi-stage production process [Williamson (1985)]. In practice, one of the most important vertical integration issues concerns integration between market-making and production. This involves the issue of whether an entrepreneur who has identified a market-making opportunity will also invest in production facilities to generate his own supplies of the product that he sells. The 'hold up' approach to vertical integration predicts that integration will occur only when there is 'lock in' between the contracting parties [Klein, Crawford and Alchian (1978)]. This suggests that market-makers will integrate backwards when production requires irreversible investments. Bilateral monopoly models of vertical integration suggest that vertical integration will occur when there is only one independent firm to which production could be subcontracted, irrespective of whether that firm would have to make substantial irreversible commitments or not. Theories of intellectual property rights suggest that vertical integration will occur where the design of the product is difficult to patent, but contains novel features which could be copied by a dishonest producer and used to produce a rival good. Theories of asymmetric information suggest that quality control may be an important issue. The producer, as the 'agent' of the market-maker, may put too little effort into production when poor quality workmanship is difficult to observe. To provide appropriate incentives, the producer may have be made responsible for all warranty work, all replacement, and be made liable to pay compensation for any reduction in the value of the brand, which means, in effect, that producer and market-maker have to be one and the same firm.

In the context of quality control, the optimism of the entrepreneur becomes an important consideration. If the market-maker is significantly more optimistic about the product than anyone else then, in particular, he is going to be more optimistic than any producer to whom he subcontracts production. If the producer expects the product to fail, then he will be less concerned about the consequences of producing faulty output, as the items may never be used by customers. Other production decisions may be affected too; thus if the producer expects the production run to be short then he will covertly economise on set up costs. This issue is examined in further detail below.

It is evident, therefore, that the ownership and control of fixed capital is not so critical to the market-making entrepreneur as neoclassical theory suggests. Although market-making requires offices, shops and warehouses, all these forms of fixed capital can be easily rented or leased; they are not, therefore, specific irreversible investments. Few entrepreneurs will invest in owning buildings at an early stages of a firm's growth, when financial resources are limited. Only when a firm is mature, and cash-flow is strong, will the typical entrepreneur consider property investments of this kind.

There is, however, one form of investment which is almost mandatory for a market-making entrepreneur at the start-up phase. This is investment in working capital, such as finished stocks and work in progress. The explanation lies in expectations. The expectations of the entrepreneur diverge from those of other people regarding the prospective demand for the product – in particular, the price that the product will command. From the standpoint of more pessimistic people, the entrepreneur's stocks of work of progress and finished product, accumulated in advance of sale, carry considerable risk. Independent financial backers, such as banks, will therefore expect the entrepreneur to bear some (indeed most) of this risk himself. The relative risk of inventory is augmented by the fact that individual consumer products are often much less versatile than the physical capital assets employed in their production and distribution: offices, shops, factories and warehouses can be redeployed to alternative uses fairly easily, but unsold stock of an unwanted consumer product must normally be heavily discounted or even disposed of as waste. Thus while neoclassical theory tends to emphasise the riskiness of fixed investment, the theory of entrepreneurship emphasises the riskiness of investment in inventory instead.

Ownership of inventory has important implications for liquidity. Many small firms fail through bankruptcy. Their cash flow is inadequate to support the inventory investment they require. The firm also requires an inventory of cash to buffer volatility in payments and receipts (which may vary independently as lines of credit expand or contract). Due to unforeseen circumstances, demand may contract at the same time that production expands, or customers pay more slowly, or suppliers reduce their credit terms, and so a liquidity crisis may ensue. Efficient inventory control, and cash flow management, supported by the appropriate statistical and accounting techniques, are therefore vital to the financial stability of the firm. The importance of such controls is confirmed by the emphasis placed on such controls by venture capitalists, and other financial backers, and by the prominent role they occupy in the business studies courses taken by many budding entrepreneurs.

6. Refining the theory: the contractual position of the entrepreneur

The market-making entrepreneur also provides a vital theoretical link between the world of information flow, which generates ideas for entrepreneurial activity, and the world of material flow, in which entrepreneurs implement their ideas by taking decisions on what and where to produce. This link has so far been portrayed as a fixed link, in which an entrepreneur who has developed a market-making project must take responsibility for implementing it himself. It could be argued, however, that entrepreneurs who are good at generating ideas for projects are not necessarily good at implementing them, and *vice versa*. This suggests that there should be a market in ideas, with some entrepreneurs specialising in producing and licensing ideas to others, who specialise in running market-making organisations which implement them. In practice, markets of this kind do not exist to any significant extent. There are two main reasons for this. The first is that property rights do not normally apply to ideas, unless they are associated with patented technologies or copyrighted materials – and even then, the enforcement of the property rights may prove costly. Secondly, even if property rights were efficient, there would still be a problem of divergent expectations. The entrepreneur who had the idea would tend to be more optimistic about its value than the entrepreneur who was best fitted to implement it. The organiser-entrepreneur would therefore be unable to offer sufficient compensation to the ideas-based entrepreneur to persuade the latter to license his idea.

It would, in principle, be possible to devise a contract in which the supplier of the idea was rewarded according to the value imputed to it from the results of the implementation. Difficulties would arise, however, not only in monitoring compliance with the contract, but also in devising terms which would align the expectations of the organiser with those of the originator. Any contract of this kind would almost certainly have to make the originator the bearer of most of the risk. This would be tantamount to the originator taking control of the implementation, so the contract would simply reproduce the ‘ownership’ solution.

The fact that the entrepreneur must normally take responsibility for implementation of his ideas implies that he usually requires both financial resources and organisational skills in order to start up. Financial resources are required to fund inventory, as described above, whilst organisational skills are required to set up the routine procedures required for market-making - the soliciting and despatch of orders, together with payment collection and credit control. This demonstrates that entry into entrepreneurship is not free: financial endowments and organisational skills are both significant barriers to entry. The problem of financial resources may be overcome in various ways - for example, by mortgaging a house to obtain a business loan, or marrying a wealthy heiress, but all such strategies still require the entrepreneur to possess certain resources from the outset - for example, a house in which he holds positive equity, or social connections and good looks. Similarly, organisational skills must normally be acquired through experience, which means having worked for a large professionally-run firm. This in turn requires the entrepreneur to have gained a job with such a firm, and perhaps to have gained a professional qualification first in order to obtain the job. Although there some individual exceptions to these rules, around which influential myths have developed, the biographical evidence on successful entrepreneurs indicates that the theory is substantially correct - the most successful entrepreneurs are not from the humble beginnings which the popular stereotype suggests.

The theory of entrepreneurship not only provides a basis for a critique of neoclassical theory, but also provides a standpoint from which to expose popular misconceptions of the entrepreneur, some of which have already been noted above. One prevalent misconception is that entrepreneurship is about self employment. Many statistical studies of the choice between employment and self-employment identify a self-employed person as an 'entrepreneur'. This is misleading, because there are certain trades and professions in which self-employment is the natural contractual form for work – for example, plumbers, window cleaners, and other workers in construction and property maintenance. To describe plumbing, for example, as a highly entrepreneurial activity, simply because it has high levels of self-employment, would erroneously suggest that it was characterised by high levels of product innovation and technological progress, which is clearly not the case.

Another variant of this fallacy is evident in the literature on SMEs. The highly empirical nature of much of this literature means that little attention has been given to the conceptual and definitional issues surrounding the entrepreneur. An entrepreneur is often defined simply as the founder or owner-manager of an SME. The theory of entrepreneurship, however, does not require people to found new firms in order to become entrepreneurs – anyone who specialises in taking judgemental decisions is qualified for the role. In some cases it may be more effective for an entrepreneur to take over an existing firm, or simply to succeed to the chief-executive position through internal promotion. Many SMEs remain small because of the limited vision of the founder, which restricts the firm's capacity to grow. In such cases takeover or succession may inject entrepreneurial ideas and thereby stimulate the growth of a previously dormant firm. Contemporary focus on SMEs represents an understandable reaction to the failings of many large firms in the 1970s and 1980s, [see Burton (1999)] but arguably the case for SMEs is better founded when it is based on the limitations of large firms than when it is based on exaggerated claims for the personal qualities of founder-entrepreneurs [Ogbor (2000)].

In practice many of the most highly entrepreneurial individuals are the CEOs of large firms. The fact that these people draw salaries does not remove their incentive to perform. For many CEOs, enhancing their personal reputation is an important motivator. In addition they may benefit financially from stock options and performance-related pay. It normally takes a very long time to grow a small firm into a very large one - sometimes several generations. A talented and impatient entrepreneur may therefore find it advantageous to acquire control of an established large firm rather than to found and grow his own. There is a popular view that the politics of internal promotion in large firms do not result in the selection of highly entrepreneurial CEOs. This may well be the case. There is, however, a market for entrepreneurial talent that is mediated by head-hunters and merchant bankers. Using this market, it is possible for entrepreneurial people to be brought into ailing large companies in order to turn them around. Theory therefore suggests that entrepreneurship is just as likely to be found in large firms as in SMEs.

Some business researchers claim that the theory of entrepreneurship does not apply to large firms because large firms are governed by routines. Others claim that large firms are controlled by groups of entrepreneurs, rather than by a single entrepreneur. These propositions are only half-truths, however. It has already been shown that short-term volatility will be handled by means of routines. Furthermore, as Schumpeter emphasised, judgemental decisions are so infrequent that not even a specialist will take them on a continuous basis. Hence even entrepreneurs carry out routine activities as part of their normal job.

Furthermore, there is nothing in the theory of entrepreneurship which limits a firm to having a single entrepreneur. Indeed, a successful entrepreneur is likely to grow his firm by developing entrepreneurial qualities amongst his employees. Decentralisation to product divisions or national subsidiaries can empower the employees of a large firm to act in an entrepreneurial way. Nevertheless, the CEO will ultimately take responsibility for coordinating the decisions of these other entrepreneurs.

7. Extending the theory: the entrepreneur as information manager

It has been repeatedly emphasised that one of the major characteristics of an entrepreneur is that he is more optimistic than other people. In particular, he believes that the chances of success of a new market-making investment are higher than other people think. This creates both problems and opportunities. The way the entrepreneur responds to these problems and opportunities has a significant influence on a firm's behaviour. (Some of the issues raised in this section have recently been addressed by Witt (1998a,b), but using an evolutionary approach rather than an information cost approach.)

Optimism creates an opportunity because the pessimism of other people creates a psychological barrier to entry. If the entrepreneur's judgment is correct then, the greater this psychological barrier, the more profit is likely to made. For if other people share his optimistic estimates then they will compete for the same resources, driving up their buying price, and also compete for the same customers, driving down the selling price, and thereby eliminating the margin from which the entrepreneur derives his profit [Hayek (1937)]. If, on the other hand, other people are very pessimistic, then there will be no competition, and so the entrepreneur will be able to exploit his market power to the full.

From the entrepreneur's point of view, the problems are just as significant as the opportunities, however. To implement his plan, the entrepreneur requires the co-operation of other people. He requires hard work from the employees who carry out the routine activities in his organisation - processing orders, collecting payments, and so on. If his investment is large, he may require independent financial backers to underwrite his judgment by incurring risks of their own. If he has developed a new product and sub-contracted its production, he will require the producer to commit himself to high quality and prompt delivery (as explained above).

One way that the entrepreneur can address these problems is by influencing the opinions of other people. He attempts to align their judgments with his own. If he can persuade his financial backers to share his optimism then he can reduce the risk they perceive, and thereby cut his cost of capital by reducing the risk premium that he must pay.

Similar considerations apply to the entrepreneur’s suppliers. A subcontractor who receives a bonus for meeting quality standards is more likely to invest in the necessary mechanisms for quality control if he anticipates that the volume of orders will grow, for if orders were to die away instead then he would be unlikely to recover the fixed cost of his investment.

The degree of optimism may also influence employees’ behaviour if they believe that the impact of their effort on measurable outcomes varies according to the state of the environment. Thus if an employee’s pay or bonus is based on some observed outcome of their work, rather than unobserved effort, and the correlation between this observed outcome and their unobserved effort is stronger when the environment provided by the entrepreneur is good, then the effectiveness of performance-related pay will be improved by good conditions. The entrepreneur will be able to reduce the level of bonus, with only a modest increase in basic salary, because the employee perceives only a modest income-related risk.

Management literature [e.g. Schein (1985)] suggests that people can obtain emotional as well as material rewards from observed success. These emotional rewards are based on the feeling of ‘making a difference’ as a result of their efforts. Similar reasoning applied to emotional rewards suggests that people who are optimistic about the situation in which they work are more likely to suppose that they can ‘make a difference’ by working hard. Conversely, if they are pessimistic then they may feel that failure is inevitable whether they work hard or not.

The natural way for the entrepreneur to promote optimism is for him to share the information on which his judgment is based. If other people are naive then they will accept his information at face value, but otherwise they may question his interpretation of the information. The entrepreneur therefore requires a reputation for honesty, and such a reputation can be costly and time-consuming to acquire. To build a reputation, the entrepreneur needs to present the evidence on which his claim is based, just as a defendant would do in a court of law. The difficulty with this is twofold. Firstly, there may be a problem with the evidence itself. No evidence may be available, because the judgement is based simply on the ‘hunch’ of the entrepreneur, or there may be so much evidence that its detail and complexity makes it impossible to explain, and so it is not worth other people's time to check it out.

By providing detailed evidence to back up his optimistic claims, the entrepreneur may undermine his bargaining power. Financial backers presented with detailed evidence may acquire sufficient information to undertake a market-making project for themselves, and thereby ‘cut out’ the entrepreneur. Employees and subcontractors may put up their prices because they believe that the value of their services is higher than they originally thought. Optimism may also encourage rivals to compete with the entrepreneur: a successful entrepreneur will wish to keep his profitability secret to avoid encouraging entry; promoting a climate of optimism is counter-productive in this respect.

The entrepreneur must therefore refine the message that he communicates to other people. He may claim that his market-making is profitable only because of unique skills that he possesses - for example, making the market requires a special type of organisation which only he knows how to design and control. This deters potential rivals from thinking that they can achieve similar results for themselves. Thus the optimism generated is not a general optimism that the conditions for everyone are good, but a specific optimism that conditions are good only because of the personal involvement of the entrepreneur.

The strategic advantage of relating optimism to the exceptional personal qualities of the entrepreneur may explain the considerable effort which entrepreneurs devote to enhancing their personal image. The heroic vision of the entrepreneur promoted through the corporate public relations departments of the firms they control is useful both for discouraging competitors, and at the same time bolstering the confidence of employees and suppliers. It is unfortunate that claims for entrepreneurial ability are often taken at face value by writers of management case-studies and business histories. By failing to recognise the strategic value of self-promotion, they inadvertently pander to the narcissism of successful entrepreneurs.

Another strategic ploy is to direct different messages to different groups of people. Shareholders, employees, suppliers and competitors may all be regarded as different ‘constituencies’ requiring reassurance on different points. While some messages, such as those extolling the personal qualities of the entrepreneur, are suitable for all constituencies, other messages are only suitable for a single constituency. For example, employers and suppliers need to be told that general trading conditions are good in order to motivate their efforts, whilst rival entrepreneurs need to be told that they are bad in order to discourage entry. If different constituencies derive their information from different sources - such as different publications - then different messages can be planted at each source to achieve the desired effect. Despite the obvious dangers of causing confusion when audiences overlap, this strategy seems to be widely used in practice.

This role of the entrepreneur as information manager explains a great deal about the personality of the successful entrepreneur. Optimism, self confidence, effective social networking and low aversion to risk have already been noted as entrepreneurial characteristics. To these can now be added the plausibility of the entrepreneur in disseminating information. Face-to-face interviews with successful entrepreneurs frequently reveal their plausibility in constructing impressive myths about themselves and their businesses. Entrepreneurs often enjoy a reputation for motivating staff by encouraging ‘positive thinking’ and setting high targets. Plausible entrepreneurs can also build consensus among different groups of shareholders by creating unanimity of perceptions. This perception involves shared optimism about the firm's prospects which is underpinned by admiration for the exceptional qualities of the entrepreneur. The theory developed in this paper therefore explains very simply why entrepreneurs devote so much time to spreading optimism among their collaborators through social networking and corporate publicity.

8. Applications to other issues in the theory of the firm

It is clearly impossible within the scope of a single paper to explain in detail how the theory of entrepreneurship can be applied to all the fields of study encompassed by an integrated theory of the firm It is, however, quite straightforward to indicate in general terms the strategy that must be followed if the programme of synthesis described in section 2 is to be carried out. This section considers some outstanding issues in the theory of the firm, and shows how they can be further illuminated using the entrepreneurial perspective set out above.

The systematic promotion of optimism explains many of the human resource management practices characteristic of entrepreneurial firms. It also explains why firms find it difficult to operate in a steady state; they either grow in an atmosphere of optimism, or decline sharply in an atmosphere of pessimism. A switch to pessimism is precipitated when the entrepreneur loses credibility as a consequence of an adverse change in conditions, which he cannot explain. Once employees become pessimistic, their incentive to work diminishes, because their perceived ability to 'make a difference' to outcomes declines. Whilst revenues fall due to depressed demand, costs prove difficult to cut because productivity also declines, and so financial crisis ensues. Optimism may eventually be restored if the firm is taken over, though not until painful process of rationalisation has been endured.

The theory of entrepreneurship can also explain the precise form of the administrative procedures used within a firm. The theory of information cost is well adapted to explaining the derivation of optimal decision rules. In setting up the organisation, the entrepreneur identifies the main sources of volatility , estimates the cost of monitoring them, and the profit impact of responding to them. Rules are then formulated which relate decisions to inputs of information from the sources concerned. These rules are then delegated to managers for implementation. It is therefore quite unnecessary to depart from the paradigm of rationality in order to explain the administrative procedures adopted by entrepreneurs.

One reason why behaviourism has been so popular in the study of organisations is the evident difficulty that many firms have encountered in changing their rules [Nelson and Winter (1982)]. This is because a change of rules is extremely costly. In practical terms it involves substantial retraining of staff and the installation of new IT systems. It can also disrupt morale by undermining traditional lines of authority within the organisation. Indeed, it could be argued that the rules selected by an entrepreneur as a basis for his organisation are the nearest thing to a fixed factor within the theory of the firm. This is because they are the single thing that is most costly to change.

The difficulty of changing the rules in large organisations will also reflect the influence of ageing on the entrepreneur. The founder of a firm is likely to be fairly old by the time his organisation has reached maturity, and the incentive for him to oversee a radical reorganisation, which may alienate some of his most loyal employees, is usually small. Accelerated succession may be one solution, provided the entrepreneur is willing to relinquish power (see below).

The difficulty of changing the rules within large firms provided a rationale for the break-up of some large firms in the 1980s and 1990s, although other factors were important too. This involved divestments and management buy-outs in private firms, as well as the privatisation of nationalised firms. In effect, rigidities in the internal capital markets of large firms were resolved by recourse to the external market. The theory of entrepreneurship explains the timing of these changes in terms of an increase in volatility in the business environment in the late 1970s, driven mainly by the process of globalisation. The appearance of new sources of international competition fundamentally changed the patterns of volatility faced by many large firms, which had become used to a 'quiet life' as 'national champions'. The increased volatility required greater flexibility, based on new forms of organisation. Where the cost of adapting procedures was too great, the large firm was often replaced by a group of small ones through divestment. The more entrepreneurial firms survived by implementing internal changes – such as 'downsizing', 'delayering' and 'empowerment'. A significant aspect of empowerment was the promotion of 'intrapreneurship', *i.e.* a more entrepreneurial attitude by individual staff. Of course, other factors were prominent too [Bhide (1990)]: as external capital markets became more sophisticated, with a wider range of risk management tools, there were efficiency gains to be achieved by making greater use of them to allocate resources between different business areas.

The increasing focus on intrapreneurship within corporate strategy may also be explained by the growing importance of maintaining intellectual property rights in innovative industries. The legal costs of enforcing property rights are often high, and considerable expertise is required in hiring suitable counsel. The large innovative multi-product firm has an advantage over the small single-product firm in defending property rights. Hence there are significant advantages for an innovative entrepreneur in becoming an intrapreneur, provided that the internal capital market through which they receive their funds is reasonably efficient [Myers and Majluf (1984); Stein (1997)]. In other cases, they may form a joint venture or strategic alliance with a larger firm simply because of that firm's superior ability to enforce intellectual property rights.

The most significant area in which the theory of entrepreneurship contributes to the theory of the firm is the one in which existing theories are weakest: namely the long-term survival and growth of the firm. By carefully defining the role of the entrepreneur in terms of judgemental decision-making, the theory makes it possible to discuss the market for this resource. There is a demand for entrepreneurs driven by the volatility of the environment, which creates a stream of investment opportunities which need to be decided upon under uncertain conditions. The supply of entrepreneurs is represented by people who, for one reason or another, prefer to control resources rather than to be controlled themselves. These optimistic, self-confident and opinionated people not only look for new opportunities to found a firm; they also look for opportunities to take over resources from ageing or failing entrepreneurs less able than themselves.

9. Relations to other theories

Technological innovation is closely allied to entrepreneurship, as the Schumpeterian paradigm makes clear. It is a mistake, however, to identify entrepreneurship exclusively with innovation, and innovation with technology. Few entrepreneurs ever undertake radical innovations of a pure Schumpeterian type – it is well known that most innovations are of an incremental nature [Loasby (1991)]. Where a technology is expensive or unreliable, the entrepreneurial decision may be not to innovate, but to wait until the technology has been refined instead. Furthermore, not all innovations are technological: Schumpeter identified five types of innovation, and no more than two of them are technological. In this respect, the theory of entrepreneurship is more 'true to Schumpeter' than the modern technologically-oriented Schumpeterian paradigm, which focuses narrowly on innovations of a particular type.

The theory of entrepreneurship is generally consistent with transaction cost economics, since it is based on very similar assumptions. Both theories agree upon the importance of 'market imperfections' and 'asymmetric information'. However, while transaction cost theory emphasises that people with privileged information may profit by cheating others, the theory of entrepreneurship suggests that they will profit by speculating against them as well, by investing in projects that they would not wish to invest in themselves. The theory of the market-making firm, set out above, illustrates how the two strands of theory can be combined. The theory of entrepreneurship therefore provides a richer sets of insights than conventional transaction costs theory, because it takes a broader view of information asymmetry.

It has been said that the resource-based theory of the firm is incompatible with transaction cost theory, but the theory of entrepreneurship makes it clear that this is incorrect (a similar point is made by Langlois and Robertson (1995)0. Both theories are compatible with the theory of entrepreneurship, and can therefore be synthesised within this framework [Foss (1997)].

Resource-based theory highlights the importance of human resources, as reflected in competencies and capabilities, to the performance of the firm [Teece and Pisano (1994)]. The theory of entrepreneurship simply asserts that the abilities of the entrepreneur are the principal human resource possessed by the firm. Other resources, such as the capabilities of scientists and managers, derive from those of the entrepreneur, since it is the entrepreneur who has selected the people with these capabilities to work for the firm.

The theory of entrepreneurship, however, has the advantage of a much longer intellectual tradition than resource-based theory, which is usually traced back only as far as Penrose (1959). It provides greater breadth and depth, and is therefore better qualified to afford a synthesis of the kind discussed in this paper. The greater breadth arises from the fact that it explicitly relates the capabilities of the entrepreneur to the nature of the business environment – in particular, to volatility and information cost. Its depth arises from the fact that it generalises the established rational action model of decision-making to multi-stage decision making, thereby providing specific predictions about the strategies used by entrepreneurs, and about the procedures that their organisations will employ. By generalising rational action, rather than adopting an overtly heterodox stance, the theory of entrepreneurship makes itself peculiarly well-adapted to form the basis for a synthetic view of the firm.

10. Summary

This paper has argued that the key to synthesising the theory of the firm is to introduce the theory of the entrepreneur and to use it as a template into which other theories can be placed. The key to understanding the entrepreneur is, in turn, to understand the environment in which he operates. This environment is volatile. Changes are endemic. What is more, many changes are unpredictable. Information is scarce and localised. Different people face different degrees of scarcity, and are located at varying distances from key sources of information.

Furthermore, some people have a reputation for knowing more than others because of their superior access to information. These people can influence the expectations of others. They can use their influence to align people's expectations, and thereby facilitate co-operative activity. Alternatively, they can use their influence to make other people's expectations diverge, creating opportunities for speculation and arbitrage. Those who really do know more than others will, on average, succeed, but those who think that they know more than others when they do not will eventually fail.

Many of the key strategic issues in the theory of the firm are clarified when viewed from the standpoint of the entrepreneur. Seemingly unconnected phenomena, addressed by different partial theories of the firm, can be seen as different manifestations of the same phenomenon – namely the subjectivity of perceptions, and the relative optimism of the entrepreneur.

Although it is radical in many of its implications, the modern theory of entrepreneurship is quite conservative in terms of the analytical methods it employs. Specific areas of firm behaviour are analysed in detail using a multi-stage decision model in which decision-makers search across a range of information sources, as well as across the usual set of alternative courses of action. The implications for research are therefore quite straightforward. The implementation of the research agenda in the theory of firm requires more detailed modelling of decision problems in established areas of business strategy. It does not require more 'brainstorming' in search of an entirely new theory. There is a progressive research agenda which is quite straightforward to carry out.

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Table 1

Two major dimensions of volatility, illustrated with examples of shocks

	Short-term	*Long-term*
General	Macroeconomic fluctuations in aggregate demand	Demographic changes affect patterns of consumer demand and labour supply
Specific	Strikes affect supplies of key raw materials to a specific industry	A specific new technology creates competitors for established products

Source: Adapted from Casson, 1999, Table 2.1

Table 2

Additional dimensions of volatility, illustrated by a further classification of specific long-term shocks

	Demand-related	*Supply-related*
Tangible	Rising price of land encourages switch to living in flats, affecting demand for furniture, garden equipment, etc.	Deforestation and sustainability policies increase the cost of timber and encourages a switch to plastic materials
Intangible	Changing attitudes to animal rights increase demand for vegetarian ready-meals	Changing attitudes to female labour force participation increase the number of women seeking life-time careers in the media industries

Table 3

Additional classification of specific short-term shocks

	Demand-related	*Supply-related*
Tangible	Extreme weather or epidemic affects demand for proprietary medicines	Strike cuts off supplies of key raw material to an industry
Intangible	Bad publicity reduces demand for a product because of a safety scare	Key supplier goes bankrupt